



RMT is committed to helping developers and owners harness renewable energy power and deliver it to the marketplace. Being able to do so effectively requires knowledge of the transmission grid and the complexities of interconnection, understanding of utility requirements, renewable engineering capabilities, and expertise with equipment and construction methods.

RMT's licensed electrical engineering professionals are experienced in providing support from the earliest stages of an energy facility's development through energization to ensure a successful project. We prepare an electrical design that optimizes site conditions and gets power from your project to the grid.

Extensive Electrical Experience

RMT's in-house electrical engineers work closely with our construction team to implement our designs and seamlessly incorporate necessary modifications during construction. We also offer extensive expertise in negotiating purchase power agreements, transmission service contracts, and interconnect agreements required to get your renewable energy development built. By combining our expertise in site planning and the design of complex energy facility and interconnection electrical systems with our balance-of-plant construction capabilities, we provide a single point of accountability to reduce your overall risk.

Electrical Design Services

RMT has designed numerous renewable energy facilities throughout the U.S. Our electrical engineering professionals provide high- and medium-voltage electrical design and engineering services, including the following:

Interconnection and Transmission Capacity Planning

RMT represents clients throughout the interconnection process—from study applications, review, interpretation, and strategy, to helping with interconnection agreement interpretation and negotiations. We study transmission provider tariff requirements and the regional transmission network, and perform transmission capacity feasibility studies using power flow analysis software (PSS/MUST, Power World) to aid in interconnection planning. By providing guidance throughout the interconnection process, we help you create a beneficial and economical interconnection strategy.

Transmission Planning and Design

From pre-permitting assistance through final transmission line design and construction, RMT's services get your projects online quickly. Our high-voltage transmission line design and construction services include:

- Route selection
- Due diligence
- Environmental and ecological permitting
- Preliminary design and mapping
- Capacity and loss evaluations
- Final design and construction

Collector System Design and Equipment Procurement

We combine our electrical skills with our in-house civil engineering and GIS capabilities to design, specify, procure, and construct the necessary electrical equipment for wind and solar (photovoltaic and thermal) plant medium-voltage collector systems, including the following design and procurement deliverables:

- Circuit layout optimization
- Loss modeling and design optimization
- Power system studies (ampacity, short-circuit, voltage, reactive compensation)
- Grounding system design
- Soil thermal and electrical resistivity testing
- Specification and procurement of pad-mount transformers, grounding transformers and switches, underground cabling, medium-voltage switchgear fiber-optic cabling, and junction boxes/splice kits



Photovoltaic (PV) System Design

RMT uses the latest industry-recognized PV design software supplemented by our own in-house design tools to configure the PV panel and create balance-of-system design. Our design and analysis services include:

- PV layout and panel configuration design: Optimized based on such factors as technical performance of the arrays specific to the site, ground cover ratio, DC to AC ratio, energy density and time of day value of energy, mounting system, and tracking technology
- Balance-of-system (BOS) design: Design considerations include equipment sizing, optimal energy loss performance, medium- and high-voltage design considerations, grounding and safety considerations, environmental conditions, operational and maintenance flexibility, electrical codes and standard practices, and utility interconnection requirements
- Energy production estimates and performance evaluations
- Monitoring, control, and communication system (SCADA) design

Communication System/SCADA Design

We have the in-house expertise to design complete, integrated SCADA and communication packages, linking all system protection and monitoring equipment, as well as turbine and PV system operating data. SCADA systems and services include:

- RTU/PLC hardware
- Fiber-optic layout and circuits
- Relaying
- Secure IP networks
- Telecom systems and circuit provisioning
- Patch panels
- Redundant configurations
- Human Machine Interfaces (HMIs)

Substation Design and Electrical Equipment Procurement

RMT assists in designing, specifying, procuring, and constructing the complete substation, switchyard, and their grid interconnection, as well as upgrading connecting distribution or transmission lines. Our substation engineering capabilities include extensive experience in designing reactive power compensation solutions (e.g., capacitor banks, reactors, DVARs) to meet interconnect requirements, as well as monitoring and mitigating harmonic distortion to meet IEEE guidelines. We also provide generator interconnection and renewable energy site development support services. Design deliverables include:

- System protection
- Revenue metering
- Reactive power compensation
- Harmonic mitigation
- Substation grounding
- Control house relay and transformer panel design
- Optimization for future generation or ties
- Distribution or transmission line upgrades
- Specification and procurement of reactive power compensation equipment, main power transformers, circuit breakers, disconnect switches, metering equipment, control house and panels, steel structures and bus, and ancillary substation equipment and materials

Engineering services may be provided by one of RMT, Inc.'s subsidiaries or affiliates: RMT, Inc., Michigan or RMT North Carolina, Inc.